

NOTE:  
1. ALL THE WELDS ARE OF 6mm SIZE FILLET WELDS UNLESS OTHERWISE SPECIFIED.  
2. ALL THE WELDS ARE TO BE DP TESTED FOR ROOT & FINAL PASSES.  
3. PART NO : 10 IS TO BE BONDED ON TO PART NO 6 WITH SUITABLE ADHESIVE.  
4. CHECK THE STATUS OF THE DRAWING BEFORE FABRICATION / MACHINING.

TOTAL WEIGHT : 1358 kg (Approx.)

S.NO	DESCRIPTION	MATERIAL	QTY	W.T	REMARKS
13	LIFTING LUG 150 x 146 x 16 Thk	IS : 2062 Fe 410-B	4	11	
12	M20 x 120 LONG, HEX BOLT & NUT WITH TOW WASHERS	IS : 1364	6	---	
11	GUIDE PIN Ø24 x 150 HEIGHT	IS : 2062 Fe 410-B	2	1	
10	RUBBER SHEET Ø1650 x Ø1110 x 20 Thk	NEOPRENE	1	---	
9	STIFFENER 140 x 150 x 10 Thk	IS : 2062 Fe 410-B	8	13	
8	ANNULAR PLATE, Ø1150 x Ø700 x 20Thk	IS : 2062 Fe 410-B	1	103	
7	SHELL Ø1150 x Ø1110 x 660 HEIGHT	IS : 2062 Fe 410-B	1	368	
6	ANNULAR PLATE, Ø1650 x Ø1110 x 20Thk	IS : 2062 Fe 410-B	1	184	
5	STIFFENER 128 x 150 x 10 Thk	IS : 2062 Fe 410-B	8	12	
4	STIFFENER 150 x 150 x 10 Thk	IS : 2062 Fe 410-B	32	57	
3	STIFFENER 80 x 150 x 10 Thk	IS : 2062 Fe 410-B	8	8	
2	SQUARE HOLLOW TUB - 1380 LONG 180 x 180 x 8 Thk	IS : 2062 Fe 410-B	4	231	
1	ANNULAR PLATE, Ø2500 x Ø1800 x 20Thk	IS : 2062 Fe 410-B	1	371	

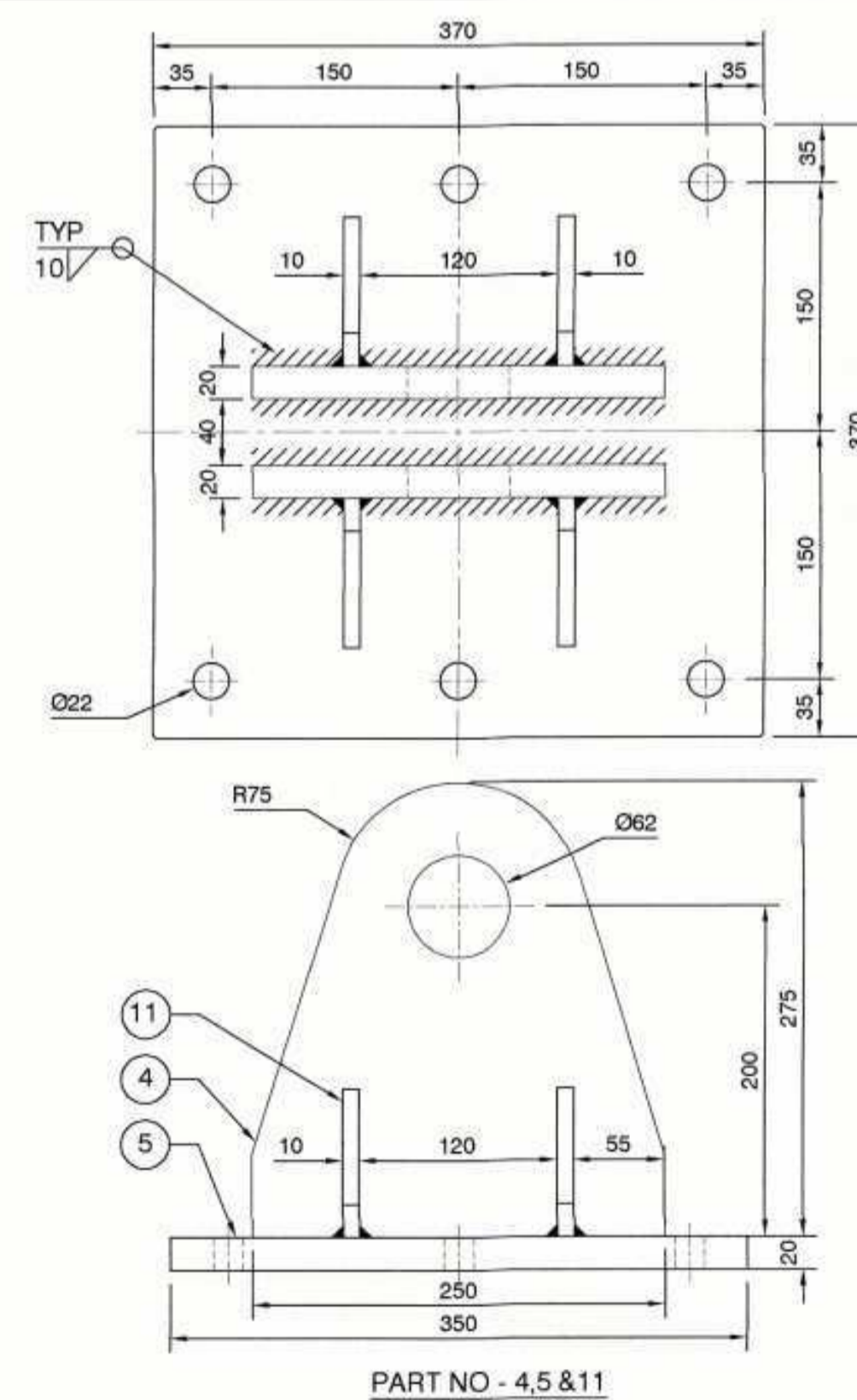
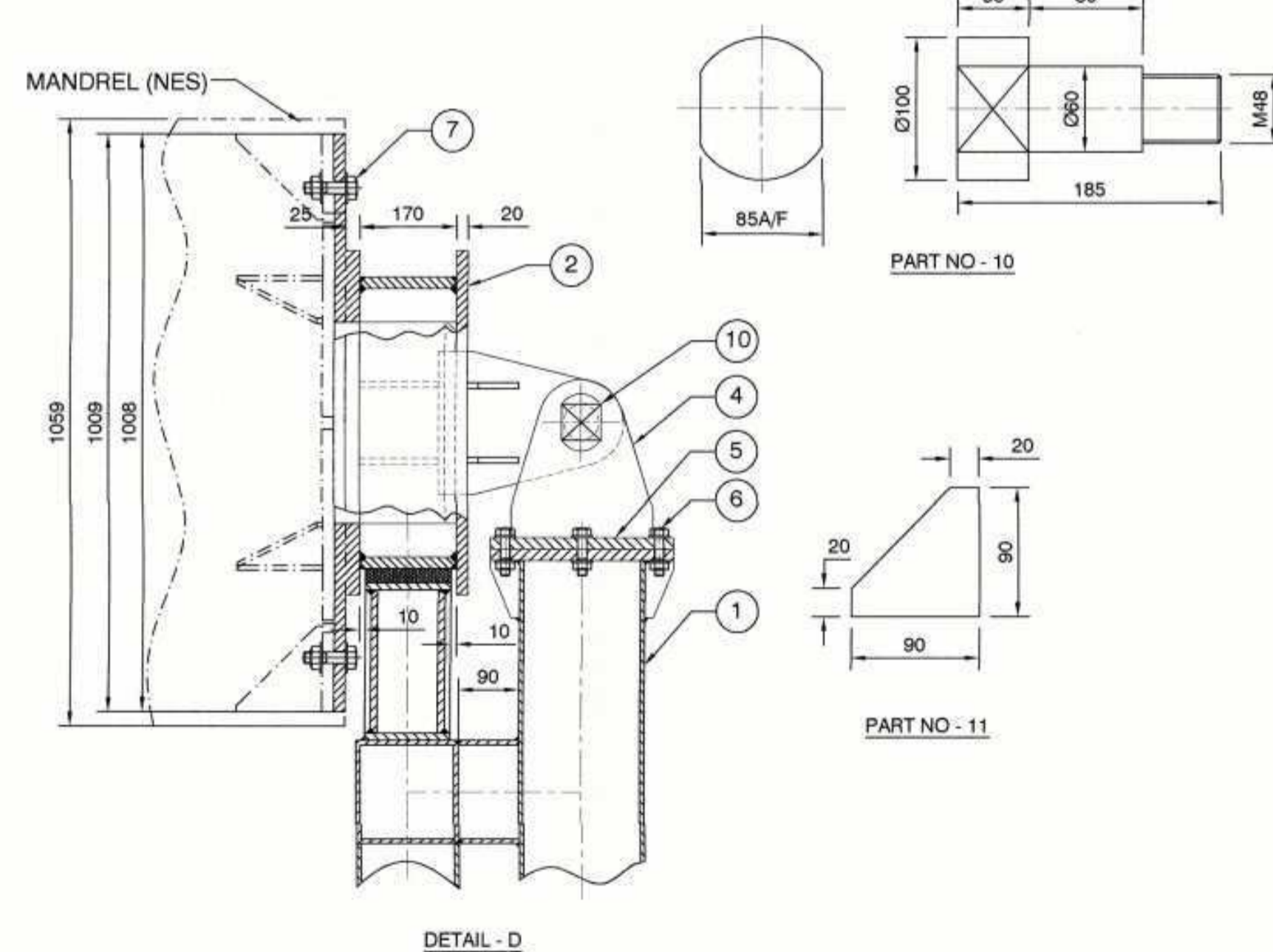
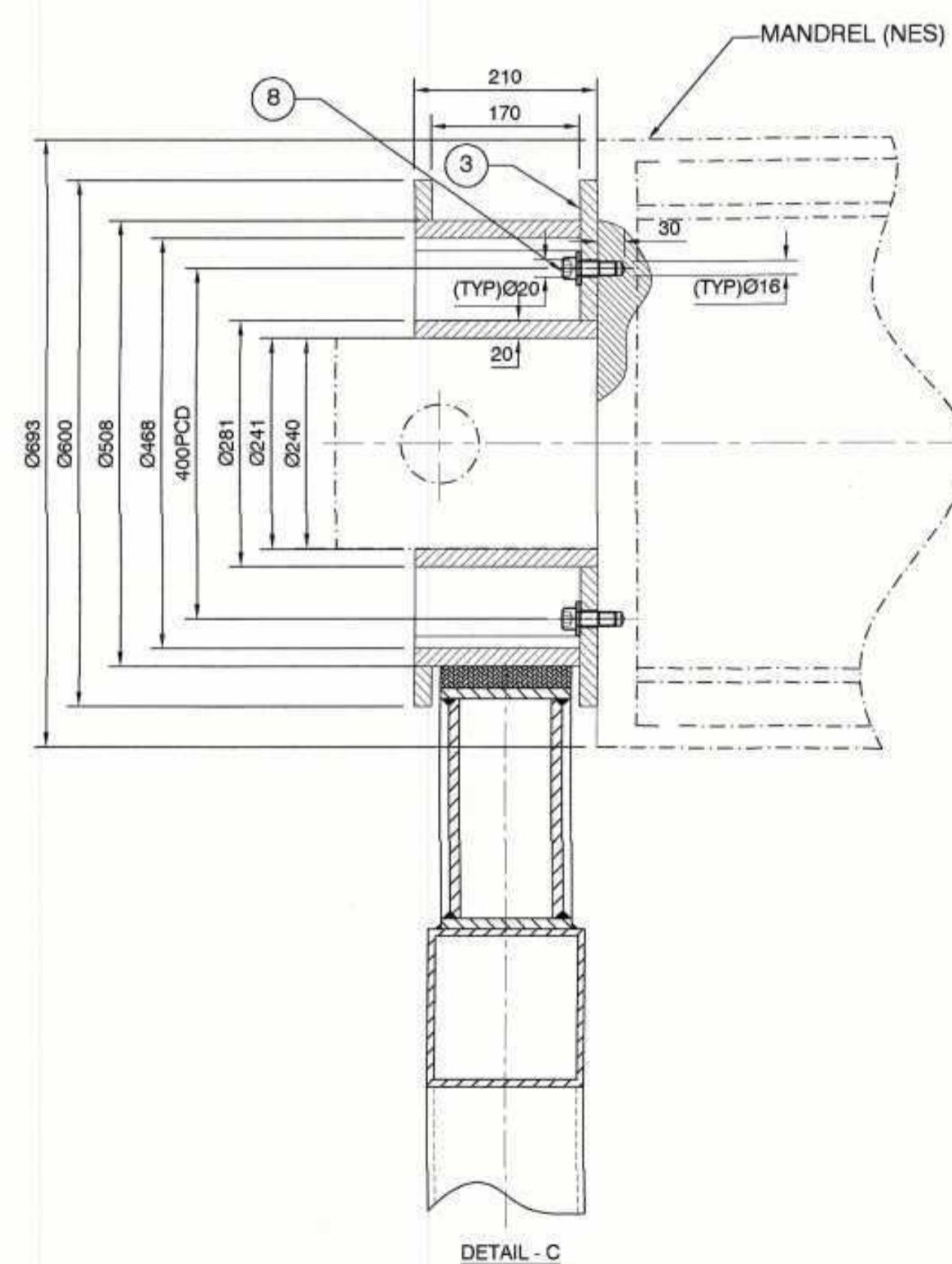
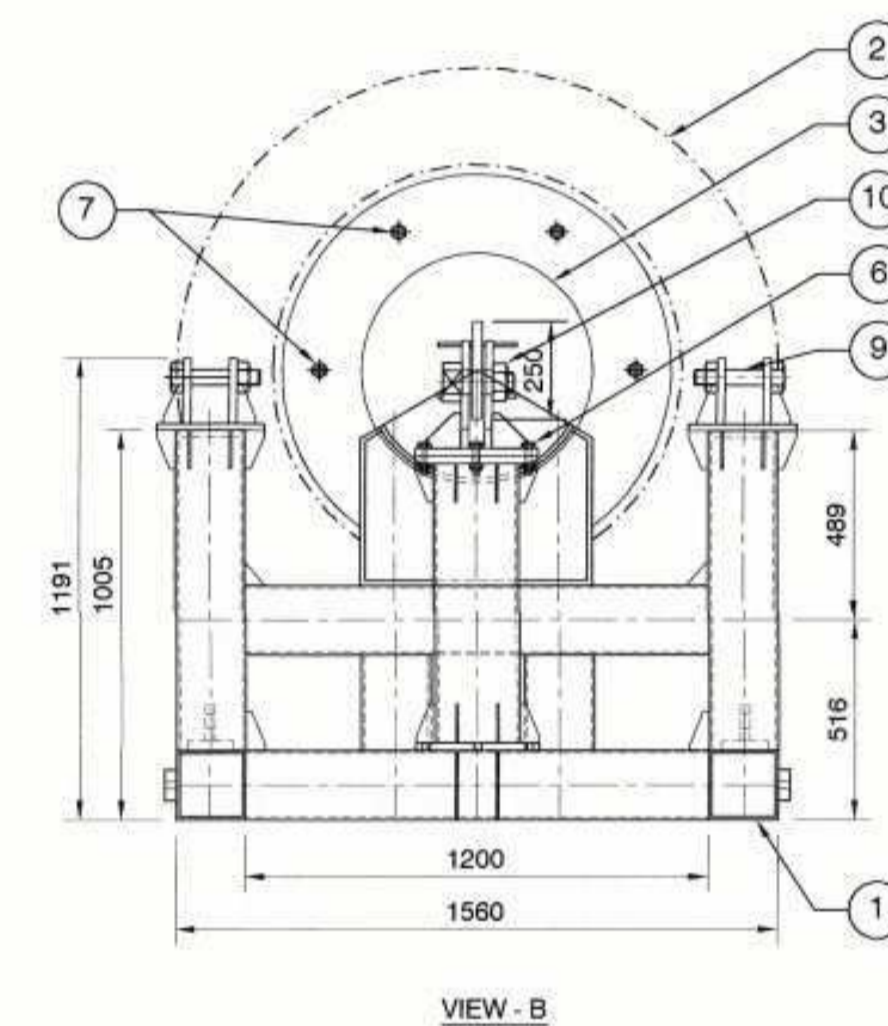
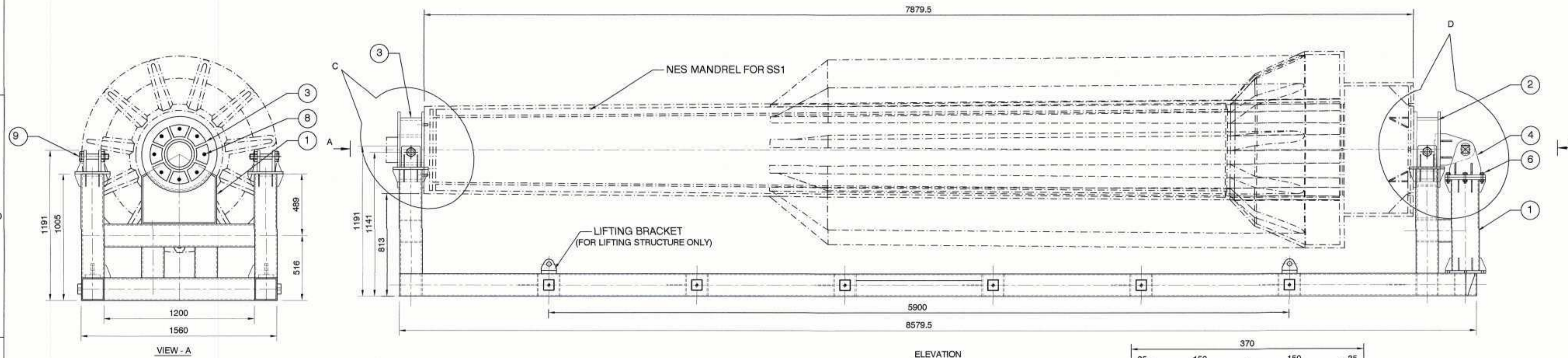
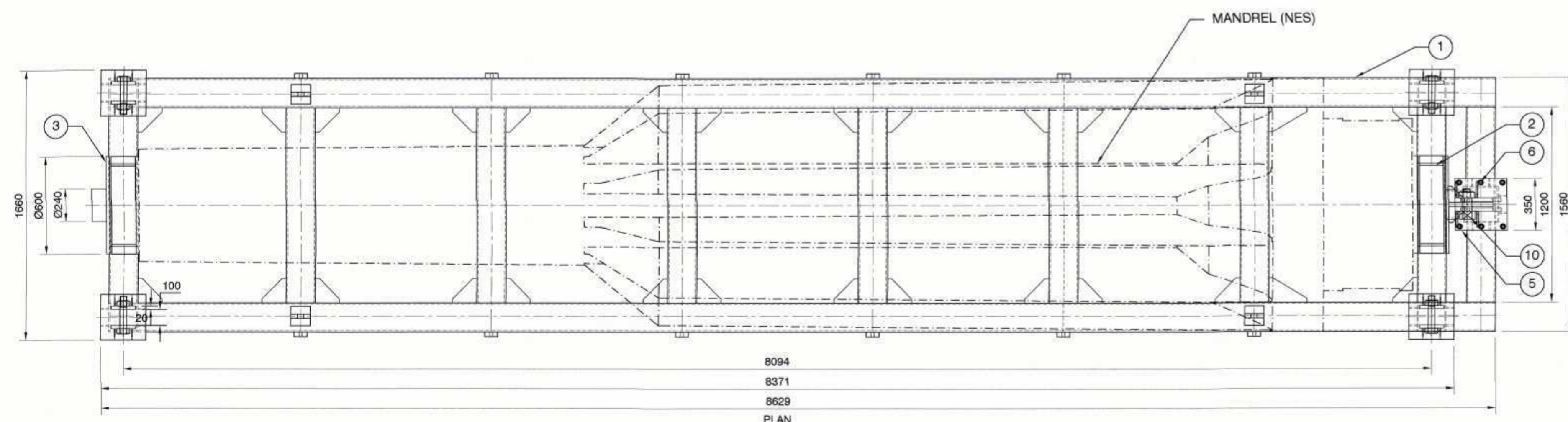
STATUS	SIGN.	DATE
FOR DISCUSSION		21/8/18
FOR TENDER		21/8/18
FOR FABRICATION		

DO NOT SCALE THE DRAWING  
ASK IF IN DOUBT  
UNLESS OTHERWISE SHOWN  
ALL DIMENSIONS ARE IN MILLIMETERS  
REMOVE SHARP EDGES & BURRS  
CHAMFER 1 M.M. X 45°  
MACHINING FINISH IN MICRONS :-  
▽ 8 - 25 ▽ 1.6 - 8  
▽▽ 0.025 - 1.6 ▽▽▽ < 0.025

DEVIATION FOR NON TOLERANCED DIMENSIONS (IS - 2102)	LENGTH IN M.M. OF SHORTER SIDE OF ANGLE UPTO & INCL.
DIAMETERS & LENGTHS UPTO & INCL. 6 +0.1 -0.2	1- 6 ± 1'-00
6 - 30 +0.2 -0.3	6- 30 ± 0'-30
30 - 120 +0.3 -0.5	30-120 ± 0'-20
120 - 315 +0.5 -0.8	120-315 ± 0'-10
315 - 1000 +0.8 -1.2	
1000 - 2000 +1.2 -1.6	
2000 - 4000 +2.0 -2.5	
4000 & ABOVE +3.0 -3.5	

SCEND&ASG  
DESIGNED: [Signature]  
DES. CHKD: [Signature]  
DRAWN: [Signature]  
DRG. CHKD: [Signature]  
APPROVED: [Signature]  
SIGN. DATE

TITLE  
MANDREL (NES) SUPPORT STAND FOR SS1  
SHAR CENTRAL DESIGNS & ADVANCED SYSTEMS GROUP  
SATISH DHAWAN SPACE CENTRE SHAR  
I.S.R.O.  
SCALE 1:10  
DRG. NO. 10-03-SSLV-09-006/A1  
SHEET 1 OF 1



**NOTES :**

1. ALL DIMENSIONS SHOWN ARE FINAL MACHINED DIMENSIONS.
2. ALL THE WELDS ARE OF 6 MM SIZE FILLET UNLESS OTHERWISE SPECIFIED.
3. ALL WELDS ARE TO BE DP TESTED FOR ROOT AND FINAL PASSES TO ENSURE WELD QUALITY.
4. ALL BUTT WELDS SHALL BE 100% RADIOGRAPHED.
5. ALL SUB-ASSEMBLIES SHALL BE PAINTED AS PER USER SPECIFICATION.
6. CHECK THE STATUS OF THE DRAWING BEFORE FABRICATION/MACHINING.

TOTAL WEIGHT - 2389Kg (Approx)					
11	STIFFENER 90 x 90 x 10THK	IS:2062 GR-B	4	3	
10	PIN Ø100 - 185Lg. WITH M42NUT & WASHER	En-24	1	6	
9	HEX. BOLT M42 - 200Lg. WITH NUT & WASHER	IS:1364	4	-	8.8 CLASS
8	HEX SOCKET HEAD SCREW M16 - 45Lg. WITH WASHER	IS:2269	8	-	8.8 CLASS
7	HEX. BOLT M20 - 76Lg. WITH NUT & WASHER	IS:1364	6	-	8.8 CLASS
6	HEX. BOLT M20 - 70Lg. WITH NUT & WASHER	IS:1364	6	-	8.8 CLASS
5	PLATE 370 x 370 X 20THK	IS:2062 GR-B	1	21	
4	BRACKET 275 x 250 x 20THK	IS:2062 GR-B	2	21	
3	TOP END CONNECTOR	IS:2062 GR-B	1	2338	REF. SHEET 2 OF 2
2	BOTTOM END CONNECTOR	IS:2062 GR-B	1		REF. SHEET 2 OF 2
1	SUPPORT STRUCTURE	IS:2062 GR-B	1		REF. SHEET 2 OF 2
S.NO	DESCRIPTION	MATERIAL	QTY	W.T	REMARKS

STATUS	SIGN.	DATE
FOR DISCUSSION		
✓ FOR TENDER	<i>Don</i>	2/18/18
FOR FABRICATION		

DO NOT SCALE THE DRAWING  
ASK IF IN DOUBT  
UNLESS OTHERWISE SHOWN  
ALL DIMENSIONS ARE IN MILLIMETERS  
REMOVE SHARP EDGES & BURRS  
CHAMFER 1 M.M. X 45°  
MACHINING FINISH IN MICRONS :-  
▽ 8 - 25 ▽ ▽ 1.6  
▽ ▽ 0.025 - 1.6 ▽ ▽ < 0.025

DEVIATION FOR NON TOLERANCED DIMENSIONS (IS -2102)	
DIAMETERS & LENGTHS	LENGTH IN M.M. OF SHORTER SIDE OF ANGLE UPTO & INCL
UPTO & INCL. 6 +0.1	
6 - 30 +0.2	
30 - 120 +0.3	
120 - 315 +0.5	1 - 6 ± 1°-00'
315 - 1000 +0.8	6 - 30 ± 0°-30'
1000 - 2000 +1.2	30 - 120 ± 0°-20'
2000 - 4000 +2.0	120 - 400 ± 0°-10'
4000 & ABOVE +3.0	

SCEND&amp;ASG

DESIGNED	<i>S.S.</i>	
DES.CHKD	<i>(Signature)</i>	
DRAWN	CHANDU	31-01-2018
DRG.CHKD	<i>S.S.</i>	
APPROVED	<i>(Signature)</i>	
	SIGN	DATE

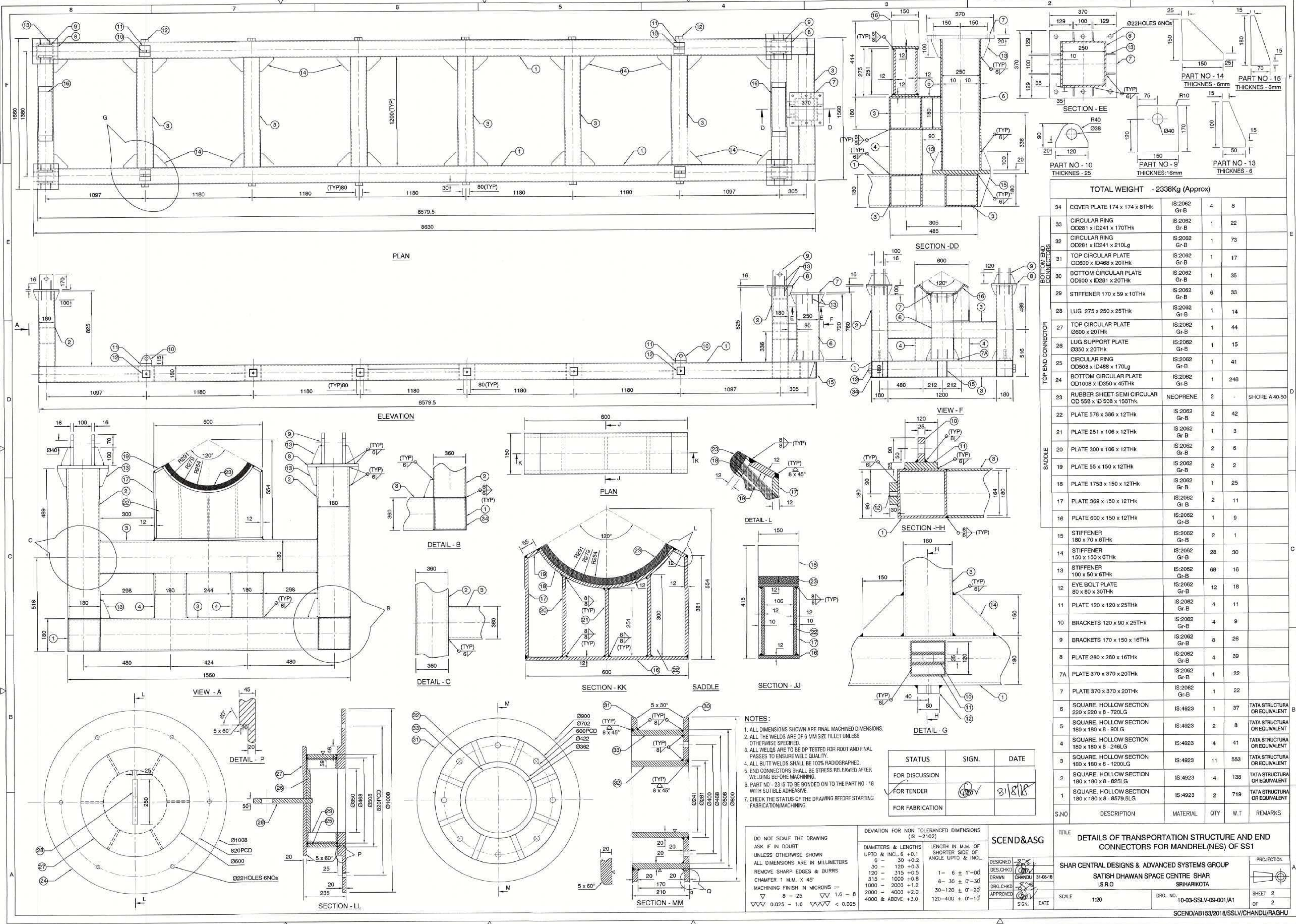
TITLE	GA OF MANDREL(NES)TRANSPORTATION SYSTEM WITH END CONNECTORS FOR SS1 AT CASTING FACILITY OF SPP
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	SHAR CENTRAL DESIGNS & ADVANCED SYSTEMS GROUP
18	SATISH DHAWAN SPACE CENTRE SHAR I.S.R.O SRIHARIKOTA

SCALE	1:20	DRG. NO.	10-03-SSIV-09-001/A1
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PROJECTION
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SHEET	1
OF	2



TOTAL WEIGHT - 2338Kg (Approx)					
34	COVER PLATE 174 x 174 x 8THK	IS:2062 Gr-B	4	8	
33	CIRCULAR RING OD281 x ID241 x 170THK	IS:2062 Gr-B	1	22	
32	CIRCULAR RING OD281 x ID241 x 210Lg	IS:2062 Gr-B	1	73	
31	TOP CIRCULAR PLATE OD600 x ID468 x 20THK	IS:2062 Gr-B	1	17	
30	BOTTOM CIRCULAR PLATE OD600 x ID281 x 20THK	IS:2062 Gr-B	1	35	
29	STIFFENER 170 x 59 x 10THK	IS:2062 Gr-B	6	33	
28	LUG 275 x 250 x 25THK	IS:2062 Gr-B	1	14	
27	TOP CIRCULAR PLATE OD600 x 20THK	IS:2062 Gr-B	1	44	
26	LUG SUPPORT PLATE OD350 x 20THK	IS:2062 Gr-B	1	15	
25	CIRCULAR RING OD508 x ID468 x 170Lg	IS:2062 Gr-B	1	41	
24	BOTTOM CIRCULAR PLATE OD1008 x ID350 x 45THK	IS:2062 Gr-B	1	248	
23	RUBBER SHEET SEMI CIRCULAR OD 558 x ID 508 x 150THK.	NEOPRENE	2	-	SHORE A 40-50
22	PLATE 576 x 386 x 12THK	IS:2062 Gr-B	2	42	
21	PLATE 251 x 106 x 12THK	IS:2062 Gr-B	1	3	
20	PLATE 300 x 106 x 12THK	IS:2062 Gr-B	2	6	
19	PLATE 55 x 150 x 12THK	IS:2062 Gr-B	2	2	
18	PLATE 1753 x 150 x 12THK	IS:2062 Gr-B	1	25	
17	PLATE 369 x 150 x 12THK	IS:2062 Gr-B	2	11	
16	PLATE 600 x 150 x 12THK	IS:2062 Gr-B	1	9	
15	STIFFENER 180 x 70 x 6THK	IS:2062 Gr-B	2	1	
14	STIFFENER 150 x 150 x 6THK	IS:2062 Gr-B	28	30	
13	STIFFENER 100 x 50 x 6THK	IS:2062 Gr-B	68	16	
12	EYE BOLT PLATE 80 x 80 x 30THK	IS:2062 Gr-B	12	18	
11	PLATE 120 x 120 x 25THK	IS:2062 Gr-B	4	11	
10	BRACKETS 120 x 90 x 25THK	IS:2062 Gr-B	4	9	
9	BRACKETS 170 x 150 x 16THK	IS:2062 Gr-B	8	26	
8	PLATE 280 x 280 x 16THK	IS:2062 Gr-B	4	39	
7A	PLATE 370 x 370 x 20THK	IS:2062 Gr-B	1	22	
7	PLATE 370 x 370 x 20THK	IS:2062 Gr-B	1	22	
6	SQUARE. HOLLOW SECTION 220 x 220 x 8 - 720LG	IS:4923	1	37	TATA STRUCTURA OR EQUIVALENT
5	SQUARE. HOLLOW SECTION 180 x 180 x 8 - 90LG	IS:4923	2	8	TATA STRUCTURA OR EQUIVALENT
4	SQUARE. HOLLOW SECTION 180 x 180 x 8 - 246LG	IS:4923	4	41	TATA STRUCTURA OR EQUIVALENT
3	SQUARE. HOLLOW SECTION 180 x 180 x 8 - 1200LG	IS:4923	11	553	TATA STRUCTURA OR EQUIVALENT
2	SQUARE. HOLLOW SECTION 180 x 180 x 8 - 825LG	IS:4923	4	138	TATA STRUCTURA OR EQUIVALENT
1	SQUARE. HOLLOW SECTION 180 x 180 x 8 - 8579.5LG	IS:4923	2	719	TATA STRUCTURA OR EQUIVALENT
S.NO	DESCRIPTION	MATERIAL	QTY	W.T	REMARKS

NOTES:  
1. ALL DIMENSIONS SHOWN ARE FINAL MACHINED DIMENSIONS.  
2. ALL THE WELDS ARE OF 6 MM SIZE FILLET UNLESS OTHERWISE SPECIFIED.  
3. ALL WELDS ARE TO BE UP TESTED FOR ROOT AND FINAL PASSES TO ENSURE WELD QUALITY.  
4. ALL BUTT WELDS SHALL BE 100% RADIOGRAPHED.  
5. END CONNECTORS SHALL BE STRESS RELEASED AFTER WELDING BEFORE MACHINING.  
6. PART NO - 23 IS TO BE BONDED ON TO THE PART NO - 18 WITH SUTIBLE ADHESIVE.  
7. CHECK THE STATUS OF THE DRAWING BEFORE STARTING FABRICATION/MACHINING.

STATUS	SIGN.	DATE
FOR DISCUSSION		
FOR TENDER		31/8/18
FOR FABRICATION		

DO NOT SCALE THE DRAWING ASK IF IN DOUBT UNLESS OTHERWISE SHOWN ALL DIMENSIONS ARE IN MILLIMETERS REMOVE SHARP EDGES & BURRS CHAMFER 1 M.M. X 45° MACHINING FINISH IN MICRONS :- ▽ 8 - 25   ▽▽ 1.6 - 8 ▽▽▽ 0.025 - 1.6   ▽▽▽▽ < 0.025		DEVIATION FOR NON TOLERANCED DIMENSIONS (IS - 2102) DIAMETERS & LENGTHS UPTO & INCL 6 +0.1 6 - 30 +0.2 30 - 120 +0.3 120 - 315 +0.5 315 - 1000 +0.8 1000 - 2000 +1.2 2000 - 4000 +2.0 4000 & ABOVE +3.0		LENGTH IN M.M. OF SHORTER SIDE OF ANGLE UPTO & INCL. 1 - 6 ± 1'-00 6 - 30 ± 0'-30 30 - 120 ± 0'-20 120 - 400 ± 0'-10	
SCEND&ASG		DESIGNED DES.CHKD DRAWN DRG.CHKD APPROVED		SIGN. DATE	

TITLE DETAILS OF TRANSPORTATION STRUCTURE AND END CONNECTORS FOR MANDREL(NES) OF SS1					
SHAR CENTRAL DESIGNS & ADVANCED SYSTEMS GROUP SATISH DHAWAN SPACE CENTRE SHAR I.S.R.O SRIHARKOTA					
SCALE	1:20	DRG. NO.	10-03-SSLV-09-001/A1	SHEET	2
SCEND/AB153/2018/SSLV/CHANDU/RAGHU				OF	2